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ABSTRACT

A model for evaluating the extent to which instruction is individualized is described. The model is based on a conceptualization of individualization which focuses on observable teacher behavior resulting in the manipulation of classroom environmental and instructional variables to meet the needs of individual learners. For evaluation purposes individualization was considered an attribute of instruction. An evaluation instrument was developed and field tested. This indicated that teachers and others can employ the model reliably. The model appears to be valid and have heuristic value; several implications for the use of the model are discussed. (Author)

# A Systematic Process for Evaluating the Individualization of Instruction

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Discussion of individualized instruction often results in what Frase (1972) called "a concatenated assemblege of pedagogical phrases" (p. 45). This seems to have occurred because there is such a variety of beliefs and opinions about what constitutes individualized instruction. For example, PSI, Project PLAN and IPI are portrayed as individualized instructional approaches. Yet each differs from the others both in the quality and the nature of instruction. The confusion about individualized instruction is further compounded by the current "fad" status of individualization. That is, if a teacher, publisher, or other educator wishes to get anywhere in the world of education, the tag "individualized" is manditory, or no one will pay any attention. Little matter whether the label is appropriate since the confusion is so great that one could probably find support in the education literature to justify almost any use of the term.

This confusion has created two related problems. First, there is a need for a clear conceptualization of exactly what individualized instruction is and what it means to the classroom teacher. Second, practitioners (teacher, principals, and administrators) need a procedure for determining whether or not a program is indeed individualized. To meet these problems an evaluation model has been developed which can be applied to instructional programs to determine the extent to which the program is individualized. The model differs from most evaluation models in that it focuses on the concept of individualization rather than on the product(s) of the instructional program. As such, the model is oriented toward the development and delivery processes of instructional programs in terms of their individualized nature. Such a model can serve several purposes for both developers and evaluators. For example, a developer can use the model as a guide to systematically individualize instruction in a purposeful manner rather than just choosing common

individualizing strategies. The model can also serve a heuristic purpose for conceptualizing the purposes and processes involved in individualizing instruction. In addition, program evaluators can use this model to determine if instructional programs are developed to meet overall educational goals and purposes. Finally, use of this model opens the process of individualization to careful scrutiny and, as a result, individualized programs should become more compatible with the wishes of both administrators and practitioners. It may also promote systematic study of individualization since the identified variables can be systematically manipulated under controlled conditions.

For the purposes of this model, individualized instruction is defined as a process through which variables in the instructional milieu are systematically manipulated as a function of the needs of individual learners and the instructional objectives. The concept of individualization becomes manageable because there are a finite number of variables over which the instructor has control. These variables are divided into two classes -- environmental and instructional -- and are manipulated to accommodate individual student needs and unique differences in order to maximize the probability of learning. Since the manipulation of each variable results in observable change either in environmental arrangements or instructional procedures, the concept of individualization becomes an observable phenomenon. Each variable in both general classes may be arranged independently of every other variable, therefore individualization as a concept may be considered a matter of degree. A program may have many or all variables arranged according to student needs or only one or two. In addition, each variable can be manipulated to a greater or lesser extent. The extent to which each variable can be manipulated is continuous and can be conceived of as infinite. However, for descriptive

and evaluative purposes a scale organized into a conceptual continuum of manipulation is presented.

As an instructional process, individualization requires that the instructional and environmental variables be arranged in a manner to maximize the probability of each individual learning what is intended. The basic procedure in developing an individualized program is the arrangement of these variables. The continuum exists in terms of: (a) how many variables in each category are manipulated, (b) the extent to which each is manipulated, and (c) the quality of the manipulation. The first dimension, how many variables are manipulated, is based on the total number of variables manipulated and may range from no variables to all variables. Since there are a total of 13 of these variables, it is possible to have a total of 13 variables manipulated (see Table 1). The second dimension, the extent of the manipulation, is based on the notion that manipulation of each variable is a matter of degree. Since individualization is intended to accommodate individual needs, this continuum is conceptualized along a continuum of accommodation of individuals. For example, the continuum runs from no manipulation to complete arrangement of the variable to meet individual needs. This had been divided into a five point scale which characterizes the extent of the manipulation of each variable. It is recognized that complete manipulation of all 13 variables is not only idealistic but probably unattainable. However, for the purpose of conceptualization, this ideal form of individualization is presented as a goal toward which to strive. That is, a teacher should attempt to manipulate as many variables as possible to the greatest extent possible, realizing it is probably impossible to manipulate all variables for all students at all times.

The third dimension, the quality of the manipulation, relates to the information

used in deciding how the variable will be manipulated. This continuum consists of a range from use of no information to use of an exemplary amount of information. Decision information is drawn from three major sources: empirical data, logic and student assessment. This continuum is important since individualization requires considered and reasonable decisions based on sound information. This continuum is relatively complex and judgemental, but is conceptualized on the quality of the information. The upper end of the continuum necessarily includes logic, empirical research results and assessment data. In addition, the instructor should be able to articulate how the data were used in deciding to arrange the variable as observed. The other end of the continuum involves the use of no data with no articulation of why no data were used. The increasingly good use of data, as well as an increasing ability to articulate the application of this data to practice, defines progress on this continuum.

In evaluating the individualization of instruction the notion of individualization has been conceived of as similar to an attribute. For example, intelligence may be considered an attribute of an individual. Evaluation of this attribute could attempt to discover how much of the attribute was present, what areas were present (e.g. quantitative or verbal); and the quality of the attribute (e.g. practical or theoretical). With indiyidualization considered an attribute of instruction, the evaluation process determines: (1) how much individualization is present, (2) in what ways it is present and (3) the quality of the presence. To guide the evaluation process an evaluation instrument has been developed; the instrument focuses on systematic observation of the behaviors of the educator or instructional product. Use of the instrument provides a descriptive picture of the instruction being evaluated in terms of how much individualization is present.

## Method

The evaluation instrument was field tested with 15 pairs of student teachers in an elementary education teacher training program. A three hour training was given during which the procedures for use of the evaluation instrument and scoring was presented as described in the instruction manual. Classroom programs were then evaluated. The manual is available upon request.

## Results

The instrument was employed with generally high reliability; average-agreement for all pairs was 83%; range was from 52% agreement to 100% agreement. General agreement on some dimensions appeared to be lower than on others. The dimensions of representational mode and content of objectives appeared to have lower rates of agreement than the other dimensions.

## Conclusions

This evaluation model appears to serve several useful functions. First, it casts the concept of individualization into a reality base. That is, individualization is defined as specific actions taken by teachers to accommodate individual differences. These actions are comprised of manipulations of variable features of the instructional mileau. As a result, it is possible to conceptualize individualization in a comprehensive manner as well as to practice individualization. Second, individualization is conceptualized as a matter of degree. That is, programs may be either highly individualized or minimally individualized. Such a notion makes possible the planning of a progressively individualized program. And, when individualization is a programatic goal, it is possible to assess the progressive degree of individualization developed over time. Such a notion should be beneficial to both developers and evaluators of instruction. Third because of the clarity of

the conceptualization, the model has heuristic value. Once each variable is identified and defined, specific variables can be chosen on which to begin or increase the level of individualization. This makes the process of individualization a matter of conscious decision making on the part of the developer.

An additional advantage of this approach is the comprehensive manner in which the process of individualization is treated. This includes the manipulation of variables to individualize instruction, the degree to which each is manipulated and the justification for this action. As a result instruction is not portrayed as a unidimensional enterprise but as a complex process requiring careful and reasoned development. When using the model for a developmental guide, each dimension may be systematically planned for and attended to. Such a procedure should result in more accurate and careful instructional development. For example, as a consequence of using the evaluation model, student teachers became aware of how many ways in which instruction could be individualized. They also became aware of how each variable could be justified. As a result, these students' teaching strategies more closely approximated a rational and systematic approach to instructional development.

Several training problems were encountered. The major problem appeared to be insuring that evaluators are completely familiar with all the identified variables. Particular emphasis should be given to variables which are not commonly considered such as "representational mode" and "content of objectives." Presentation of multiple examples of these variables may solve this problem. Other problems were mainly procedural and included the need for interview techniques to gather justification information and the need to gain familiarity with the recording procedures. These do not appear to be serious problems and can probably be adequately compensated

with practice under controlled conditions.

The complete text of this report is available as well as the administration manual and the evaluation instrument upon request. Send requests to:

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Reference

Frase, L. E. The concept of instructional individualization. Educational Technology, 1972, 12, 45.

Table 1

The thirteen identified variables which may be manipulated to individualize instruction

| Variable | Definition |
|---|---|
| 1. Representational Mode | The way in which information will be represented to the learner; based on a continuum from concrete to abstract. |
| 2. Message Channel | The means through which information will be communicated to the learner (auditory, visual, tactile, olefactory, etc.). |
| 3. Content of Objectives | a. The familiar notion of content or "knowing what" or the subject matter of the objectives.<br>b. The mental process of the objective or focusing on the "knowing how" or level of objectives such as is done in Bloom's Taxonomy. |
| 4. Establishment of Objectives | a. Who sets objectives; that is, the level of student participation in the objective setting process.<br>b. How are objectives set; that is, on what basis are objectives set (i.e. pre-determined according to an instructional program or based strictly on student needs). |
| 5. Goals | Purpose statements which guide the development of an instructional program. |
| 6. Strategies | The actions the teacher takes to implement the instructional process. |

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|---|---|---|
| 7. | Assessment | The process of gathering decision making information in order to determine how variable features of the instructional mileau should be manipulated. |
| 8. | Evaluation | Colleting information relative to student achievement of objectives. |
| 9. | Remediation | Providing students with experiences appropriate for correcting errors. |
| 10. | Time | a. Time allowed for completion of objectives.<br>b. Time allowed for instruction. |
| 11. | Space | a. The design of the physical area designated for learning.<br>b. The design of the physical areas for activities not associated with classroom learning (e.g. playround, cafeteria). |
| 12. | Grouping | The way in which learners are grouped for instruction and other activities. |
| 13. | Resources | a. Textual: printed, sound or visual learning materials which are an intricate part of the learning program.<br>b. Worksheets: materials prepared to provide for student responses<br>c. Human: individuals available to support and facilitate the success of the instructional program.<br>d. Other resources: this includes machinery like film projectors, tape recorders, overhead projectors, etc. |